PART 70 MINOR SOURCE MODIFICATION
OFFICE OF AIR MANAGEMENT
and
CITY OF GARY
DIVISION OF AIR POLLUTION CONTROL

U. S. Steel - Gary Works
One North Broadway
Gary, Indiana 46402-3199

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This approval is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Source Modification No.: 089-10160-00121	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information

The Permittee owns a steel mill.

Responsible Official:	James Alexander
Source Address:	One North Broadway, Gary, Indiana 46402
Mailing Address:	One North Broadway, Gary, Indiana 46402
SIC Code:	3312
County Location:	Lake
County Status:	Nonattainment for ozone, PM-10 (City of Gary), and SO_2 (City of Gary)
Source Status:	Major source, under PSD Program, Emission Offset Program, and Part 70 Program

A.2 Emission Units and Pollution Control Equipment Summary

This permit is to modify the Turboblower Boiler House (TBBH) as follows:

(a) Replace existing BFG burners in previously permitted TBBH boiler no. 6 with new, larger burners. This modification will increase the heat input capacity of the boiler from 560 to 710 million Btu per hour while combusting BFG, but heat input capacity will remain unchanged combusting natural gas. This modification will allow the boiler to increase the combustion of BFG while reducing the equivalent amount flared at the BFG flare stacks. The modification will also remove the ability of boiler no. 6 to utilize no. 6 fuel oil and COG. This boiler is not attached to any air pollution control devices and exhausts through an individual stack, identified as TBBH-6.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability because it is a major source, as defined in 326 IAC 2-7-1(22). This source has submitted its Part 70 (T-089-7663-00175) application on December 13, 1996. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

A.4 Prior Permit Conditions Superseded [326 IAC 2]

The terms and conditions of this permit incorporate all the current applicable requirements for TBBH boiler no. 6, and supersede all terms and conditions of the prior operation permits issued for this facility.

SECTION B GENERAL CONSTRUCTION AND OPERATION CONDITIONS

B.1 Permit No Defense [IC 13]

This approval to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Definitions [326 IAC 2-7-1]

Terms in this approval shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2 and 326 IAC 2-7 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

B.4 Revocation of Permits [326 IAC 2-1.1-9(5)][326 IAC 2-7-10.5(i)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitation and Standards

C.1 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

(a) Where specifically designated by this approval or required by an applicable requirement, any application form, report, or compliance certification submitted under this approval shall contain certification by a responsible official of truth, accuracy, and completeness. This certification, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, on the attached Certification Form, with each submittal.

(c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this approval, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) within ninety (90) days after issuance of this approval, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If due to circumstances beyond its control, the PMP cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Gary Division of Air Pollution Control
504 N. Broadway, Suite 1012
Gary, Indiana 46402

(b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.

(c) PMP's shall be submitted to IDEM, OAM, and Gary Division of Air Pollution Control upon request and shall be subject to review and approval by IDEM, OAM, and Gary Division of Air Pollution Control. IDEM, OAM, and Gary Division of Air Pollution Control may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this approval.

(b) Any application requesting an amendment or modification of this approval shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Gary Division of Air Pollution Control
504 N. Broadway, Suite 1012
Gary, Indiana 46402

Any such application should be certified by the "responsible official" as defined by 326 IAC 2-7-1(34) only if a certification is required by the terms of the applicable rule

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

C.4 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), visible emissions shall meet the following, unless otherwise stated in this approval:

(a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.5 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided in this approval, all air pollution control equipment listed in this approval and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

C.6 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using good engineering practices (GEP) pursuant to 326 IAC 1-7-3.

Testing Requirements [326 IAC 2-7-6(1)]

C.7 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

(a) Compliance testing on new or modified emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this approval, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAM.

A test protocol, except as provided elsewhere in this approval, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Gary Division of Air Pollution Control
504 N. Broadway, Suite 1012
Gary, Indiana 46402

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

(b) All test reports must be received by IDEM, OAM and Gary Division of Air Pollution Control within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAM, and Gary Division of Air Pollution Control, if the source submits to IDEM, OAM, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.8 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Compliance with applicable requirements shall be documented as required by this approval. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when the modified operations begin.

C.9 Maintenance of Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

(a) In the event that a breakdown of the monitoring equipment occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem. To the extent practicable, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less frequent than required in Section D of this permit until such time as the monitoring equipment is back in operation.

(b) In the case of continuous opacity monitoring, whenever the continuous opacity monitor is malfunctioning or will be down for repairs or adjustments for a period of four (4) hours or more, visible emission readings should be performed in accordance with 40 CFR 60, Appendix A, Method 9, beginning four (4) hours after the start of the malfunction or down time for a minimum of one (1) hour.

(1) If the reading period begins less than one hour before sunset, readings shall be performed until sunset. If the first required reading period would occur between sunset and sunrise, the first reading shall be performed as soon as there is sufficient daylight.

(2) Method 9 opacity readings shall repeated for a minimum of one (1) hour at least once every four (4) hours during daylight operations, until such time that the continuous opacity monitor is back in operation.

(3) The opacity readings during this period shall be reported in the quarterly Compliance Monitoring Reports, unless there are ANY observed six minute averaged exceedances, in which case, these shall be reported to the air compliance inspector within four (4) working hours.

(c) The Permittee shall install, calibrate, quality assure, maintain, and operate all necessary monitors and related equipment. In addition, prompt corrective action shall be initiated whenever indicated.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.10 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 2-7-5][326 IAC 2-7-6] [326 IAC 1-6]

(a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:

(1) This condition;

(2) The Compliance Determination Requirements in Section D of this approval;

(3) The Compliance Monitoring Requirements in Section D of this approval;

(4) The Record Keeping and Reporting Requirements in Section C (Monitoring Data Availability, General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this approval; and

(5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this approval. CRP's shall be submitted to IDEM, OAM and Gary Division of Air Pollution Control upon request and shall be subject to review and approval by IDEM, OAM, and Gary Division of Air Pollution Control. The CRP shall be prepared within ninety (90) days after issuance of this approval by the Permittee and maintained on site, and is comprised of :

(A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this approval; and

(B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.

(b) For each compliance monitoring condition of this approval, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to perform the actions detailed in the compliance monitoring conditions or failure to take the response steps within the time prescribed in the Compliance Response Plan, shall constitute a violation of the approval unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.

(c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:

(1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.

(2) The Permittee has determined that the compliance monitoring parameters established in the approval conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the approval, and such request has not been denied or;

(3) An automatic measurement was taken when the process was not operating; or

(4) The process has already returned to operating within “normal” parameters and no response steps are required.

(d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.

C.11 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this approval exceed the level specified in any condition of this approval, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAM, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected facility while the corrective actions are being implemented. IDEM, OAM shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAM within thirty (30) days of receipt of the notice of deficiency. IDEM, OAM reserves the authority to use enforcement activities to resolve noncompliant stack tests.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAM that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAM may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate approval conditions may be grounds for immediate revocation of the approval to operate the affected facility.

The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.12 Monitoring Data Availability [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)]

(a) With the exception of performance tests conducted in accordance with Section C-Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this approval shall be performed at all times the equipment is operating at normal representative conditions.

(b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this approval is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this approval.

(c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.

(d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.

(e) At its discretion, IDEM and Gary Air and Land Pollution Control may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.

(f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.13 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]

(a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAM, and Gary Division of Air Pollution Control representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner or Gary Division of Air Pollution Control makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner or Gary Division of Air Pollution Control within a reasonable time.

(b) Records of required monitoring information shall include, where applicable:

(1) The date, place, and time of sampling or measurements;

(2) The dates analyses were performed;

(3) The company or entity performing the analyses;

(4) The analytic techniques or methods used;

(5) The results of such analyses; and

(6) The operating conditions existing at the time of sampling or measurement.

(c) Support information shall include, where applicable:

(1) Copies of all reports required by this approval;

(2) All original strip chart recordings for continuous monitoring instrumentation;

(3) All calibration and maintenance records;

(4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this approval, and whether a deviation from an approval condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.

(d) All record keeping requirements not already legally required shall be implemented when the modified operations begin.

C.14 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

(a) The reports required by conditions in Section D of this approval shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Gary Division of Air Pollution Control
504 N. Broadway, Suite 1012
Gary, Indiana 46402

(b) Unless otherwise specified in this approval, any notice, report, or other submission required by this approval shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM, and Gary Division of Air Pollution Control on or before the date it is due.

(c) Unless otherwise specified in this approval, any quarterly or semi-annual report shall be submitted within thirty (30) days of the end of the reporting period. The reports do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(d) The first report shall cover the period commencing on the date of completion of the modifications and ending on the last day of the reporting period.

SECTION D.1 FACILITY CONDITIONS

Replace existing BFG burners in previously permitted TBBH boiler no. 6 with new, larger burners. This modification will increase the heat input capacity of the boiler from 560 to 710 million Btu per hour while combusting BFG, but heat input capacity will remain unchanged combusting natural gas. This modification will allow the boiler to increase the combustion of BFG while reducing the equivalent amount flared at the BFG flare stacks. The modification will also remove the ability of boiler no. 6 to utilize no. 6 fuel oil and COG. This boiler is not attached to any air pollution control devices and exhausts through an individual stack, identified as TBBH-6.

Emissions Limitation and Standards

D.1.1 Applicability Emission Limitations [326 IAC 2-2] [326 IAC 2-3]

(a) The Permittee shall not allow NOx emissions from boiler no. 6 to exceed 0.14 pounds per million Btu (lbs/MMBtu) heat input during the combustion of natural gas. Compliance with this limitation shall be deemed compliance with the NOx limitation specified in Condition D.1.3 and 40 CFR 60.44. Compliance with this limit will also preclude the Permittee from the requirement to install a continuous emissions monitor (CEM) for NOx as outlined in Condition D.1.9.

(b) The Permittee shall not allow more than 1059.7 million cubic feet (MMCF) of natural gas to be combusted in TBBH boiler no. 6 per twelve (12) consecutive month period. If the stack test required in Condition D.1.7 demonstrates that NOx is emitted at a level greater than required in section (a) of this condition, then the Permittee shall not allow more than 741.8 MMCF of natural gas to be combusted in TBBH boiler no. 6 per twelve (12) consecutive month period.

(c) The Permittee shall not allow coke oven gas or no. 6 fuel oil to be combusted in TBBH boiler no. 6 without prior approval from IDEM, OAM, and the City of Gary Division of Air Pollution Control. Blast furnace gas and natural gas shall be the only fuels combusted in TBBH boiler no. 6.

Compliance with these limitations will ensure that the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 326 IAC 2-3 (Emission Offset) do not apply.

D.1.2 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 60, Subpart D.

D.1.3 NSPS Limitations [40 CFR Part 60, Subpart D] [326 IAC 12]

(a) Pursuant to 326 IAC 12 and 40 CFR Part 60, Subpart D (Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971), NO_x emissions from TBBH boiler no. 6 shall not exceed 0.20 lb/MMBtu when the boiler is burning natural gas only. This limit shall not apply in situations where the boiler is burning any combination of natural gas and blast furnace gas or blast furnace gas alone.

(b) Pursuant to 326 IAC 12 and 40 CFR Part 60, Subpart D (Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971), particulate matter (PM) emissions from TBBH boiler no. 6 shall not exceed:

(1) One-tenth (0.10) lb/MMBtu derived from fossil fuel combustion; and

(2) Twenty percent (20%) opacity except for one six-minute period per hour of not more than 27% opacity.

D.1.4 Particulate Matter less than 10 microns (PM-10) [326 IAC 12] [40 CFR 60, Subpart D] [Variance Decision dated February 22, 1999]

Pursuant to the Variance Decision dated February 18, 1998, PM-10 emissions from TBBH boiler no. 6 shall not exceed 0.037 lb/MMBtu and 27.8 lbs/hr.

The above limits shall be valid only until the Variance Decision expires on March 8, 2000. Unless the revisions to rules 326 IAC 6-1-10.1 (Lake County PM-10 Emission Requirements) have been approved, the effective date of the Variance Decision has been extended, or a new Variance Decision has been issued by this date, TBBH boiler no. 6 shall be subject to the limitations under rule 326 IAC 6-1-10.1 (Lake County PM-10 Emission Requirements) as currently written. The Permittee shall apply for a permit modification thirty (30) days prior to March 8, 2000 to incorporate the appropriate PM-10 limitation existing during that time.

D.1.5 Sulfur Dioxide (SO_2) [Variance Decision dated February 22, 1999]

Pursuant to the Variance Decision dated February 22, 1999:

(a) SO_2 emission from TBBH boiler no. 6 shall not exceed 0.182 lb/MMBtu and a total of 136.7 pounds per hour when the coke oven gas desulfurization facility is not operating.

(b) SO_2 emission from TBBH boiler no. 6 shall not exceed 0.182 lb/MMBtu and a total of 136.5 pounds per hour when the coke oven gas desulfurization facility is operating.

The above limits shall be valid only until the Variance Decision expires on March 8, 2000. Unless the revisions to rule 326 IAC 7-4-1.1 (Lake County SO_2 Emission Limitations) have been approved, the effective date of the Variance Decision has been extended, or a new Variance Decision has been issued by this date, TBBH boiler no. 6 shall be subject to the limitations under rule 326 IAC 7-4-1.1 as currently written. The Permittee shall apply for a permit modification thirty (30) days prior to March 8, 2000 to incorporate the appropriate SO_2 limitation existing during that time.

D.1.6 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for TBBH boiler no. 6.

Compliance Determination Requirements

D.1.7 Testing Requirements [326 IAC 2-1.1-11]

(a) The Permittee shall perform NOx testing on TBBH boiler no. 6 within 60 days after achieving maximum capacity, when burning natural gas alone, utilizing Method 7 (40 CFR 60, Appendix A) or other methods as approved by the Commissioner. The test shall be performed to determine compliance with conditions D.1.1 and D.1.3, and to determine whether the Permittee will be required to install and maintain a continuous emission monitoring (CEM) system for NOx.

(b) The Permittee shall perform PM-10 testing on TBBH boiler no. 6 within 60 days after achieving maximum capacity, when burning blast furnace gas on the main burners alone and natural gas on the pilots, utilizing Methods 5 or 201 (40 CFR 60, Appendix A and 40 CFR 51, Appendix M), or other methods as approved by the Commissioner. These tests shall be performed to determine compliance with condition D.1.4, and to determine a PM-10 emission factor for blast furnace gas. These tests shall be repeated

at least once every five (5) years from the date of this valid compliance demonstration.

(c) IDEM, OAM, and Gary Air and Land Pollution Control reserves the authority to perform additional testing when necessary to verify compliance with applicable rules or this permit. If testing is required by IDEM or Gary Air and Land Pollution Control, compliance with the limits specified in this section shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

D.1.8 Fuel Analysis [Variance Decision dated February 22, 1999]

(a) Compliance or noncompliance with conditions D.1.5(a) and D.1.5(b), as applicable, shall be determined using a calendar day average sulfur dioxide emission rate in pounds per million British thermal units and pounds per hour as calculated using the average daily sulfur content and heating value of the fuel as determined via a fuel sampling and analysis protocol approved by IDEM, OAM, and the City of Gary Division of Air Pollution Control.

(b) The fuel sampling and analysis protocol shall be prepared according to procedures in 326 IAC 3-3-5(a) and 326 IAC 7-4-1.1(d), as required by the Variance Decision dated February 22, 1999.

D.1.9 Continuous Emission Monitoring [326 IAC 12] [40 CFR 60, Subpart D]

Pursuant to 40 CFR 60, Subpart D, the Permittee shall install, calibrate, maintain and operate a continuous monitoring system for measuring nitrogen oxides (NOx) emissions, and either oxygen or carbon dioxide, except as provided below.

Notwithstanding 40 CFR 60.13(b), installation of a continuous monitoring system for NOx may be delayed until after the initial performance test required in Condition D.1.7(a) have been conducted. If the Permittee demonstrates during the performance test that emissions of NOx are less than 70 percent of the applicable standard in Condition D.1.3 (0.14 lbs/MMBtu), a continuous monitoring system for measuring NOx emissions is not required. If the initial performance test required in Condition D.1.7(a) demonstrates that emissions of NOx are greater than 70 percent of the applicable standard in Condition D.1.3 (0.14 lbs/MMBtu), the Permittee shall install a continuous monitoring system for measuring NOx emissions within one year after the initial performance test and comply with all other applicable monitoring requirements of 40 CFR 60, Subparts A and D.

Record Keeping and Reporting Requirements

D.1.10 Record Keeping Requirements

(a) To document compliance with conditions D.1.1, D.1.4 and D.1.5, the Permittee shall:

(1) maintain daily records of the total blast furnace gas and natural gas usage of TBBH boiler no. 6;

(2) maintain records of the PM-10 emission factors for each type of fuel used as estimated by the stack test method;

(3) maintain daily records of the average sulfur content and heating value for each fuel type used;

(4) maintain daily records of the heating value for each fuel type used.; and

(5) maintain records of the date and time identifying each period during which the

coke oven gas desulfurization facility is inoperative or malfunctioning.

(b) If applicable, the Permittee shall maintain records of the NOx continuous monitoring system to document compliance with Condition D.1.9.

(c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements of this permit.

D.1.11 Reporting Requirements

(a) To document compliance with conditions D.1.4 and D.1.5, the Permittee shall submit within thirty (30) days of the end of each calendar quarter, for TBBH boiler no. 4A, the following:

(1) Total fuel usage of each type used;

(2) Heat content, PM-10 and sulfur dioxide emission rate per unit weight or per unit volume for both fuels; and

(3) Calculated PM-10 and sulfur dioxide emission rate in pounds per hour and in pounds per million British Thermal Unit.

(b) Within thirty (30) days of the occurrence of an exceedance of the applicable limit under conditions D.1.4 and/or D.1.5, the Permittee shall submit a report containing the following:

(1) Facility identification;

(2) Date or time period of occurrence;

(3) Nature of exceedance;

(4) PM-10 and/or sulfur dioxide emission rate in pounds per hour and pounds per million British Thermal Unit, total fuel usage of each type and emission factor used to estimate sulfur dioxide emissions;

(5) Cause of exceedance; and

(6) Corrective action taken.

(c) If applicable, the Permittee shall submit an excess emissions report, as required by 40 CFR 60.7(c), within thirty (30) days of the end of each quarter. In addition to submitting this report to the addresses listed in Section C - General Reporting Requirements, the excess emissions reports shall also be submitted to the following address:

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

(d) All reports shall be submitted in accordance with Section C - General Reporting Requirements of this permit.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION
and
GARY DIVISION OF AIR POLLUTION CONTROL

PART 70 SOURCE MODIFICATION CERTIFICATION

Source Name: U.S. Steel - Gary Works
Source Address: One North Broadway, Gary, Indiana 46402
Mailing Address: One North Broadway, Gary, Indiana 46402
Source Modification No.: 089-10160-00121

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.

Please check what document is being certified:

9 Test Result (specify) _____

9 Report (specify) _____

9 Notification (specify) _____

9 Other (specify) _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION

Quarterly Report No. 1

Source Name: U. S. Steel - Gary Works
Source Address: One North Broadway, Gary, Indiana 46402
Mailing Address: One North Broadway, Gary, Indiana 46402
Source Modification No.: CP 089-10160-00121
Facility: Turboblower Boiler House (TBBH) boiler no. 6
Parameter: Natural Gas Usage
Limits: 1,059.7 million cubic feet (MMCF) per 12-consecutive month period rolled on a monthly basis (or 741.8 MMCF/ 12 month period if NOx emission rate is greater than 0.14 lb/MMBtu)

Quarter Period:_____ Year: _____

Month	Total Natural Gas Usage This Month (MMCF) (A)	Total Natural Gas Usage Previous 11-Month Period (MMCF) (B)	Total Natural Gas Usage 12-Month Period (MMCF) (A + B)

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
FAX NUMBER - 317 233-5967

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE: IT HAS POTENTIAL TO EMIT 25 LBS/HR PARTICULATES ?_____, 100 LBS/HR VOC ?_____, 100 LBS/HR SULFUR DIOXIDE ?_____ OR 2000 LBS/HR OF ANY OTHER POLLUTANT ?_____ EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: U. S. Steel - Gary Works PHONE NO. _____

LOCATION: (CITY AND COUNTY) Gary/Lake
PERMIT NO. 089-10160 AFS PLANT ID: 089-00121 AFS POINT ID: _____ INSP: _____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____
_____

DATE/TIME MALFUNCTION STARTED: _____/_____/ 19____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE_____/_____/ 19____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____
_____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

_____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____
INTERIM CONTROL MEASURES: (IF APPLICABLE) _____
_____
_____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

FAX NUMBER - 317 233-5967 *SEE REVERSE

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO2, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m. : 11 IR 2373)

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

_____

_____

Indiana Department of Environmental Management
Office of Air Management
and
City of Gary Division of Air Pollution Control

Technical Support Document (TSD)
for a Part 70 Minor Source Modification.

Source Background and Description

Source Name:	U. S. Steel - Gary Works
Source Location:	One North Broadway, Gary, Indiana 46402-3199
County:	Lake
Minor Source Modification No.:	089-10160-00121
Plant ID No.:	089-00121
SIC Code:	3312
Permit Reviewer:	Bryan Sheets

The Office of Air Management (OAM) has reviewed an application from U. S. Steel - Gary Works ("source") relating to the following:

(a) Replace existing BFG burners in previously permitted TBBH boiler no. 6 with new, larger burners. This modification will increase the heat input capacity of the boiler from 560 to 710 million Btu per hour while combusting BFG, but heat input capacity will remain unchanged combusting natural gas. This modification will allow the boiler to increase the combustion of BFG while reducing the equivalent amount flared at the BFG flare stacks. The modification will also remove the ability of boiler no. 6 to utilize no. 6 fuel oil and COG. This boiler is not attached to any air pollution control devices and exhausts through an individual stack, identified as TBBH-6.

This boiler is subject to 326 IAC 7-4-1.1 (Lake County SO_2 Emission Limitations) and 326 IAC 6-1-10.1 (Lake County PM-10 Emission Requirements). IDEM is currently revising these rules to update the facility-specific emission limitations that would help improve the air quality of the area. Since this boiler will eventually be subject to these revised emission limitations, a variance from the above mentioned state rules was requested by the Permittee and was issued by IDEM on February 22, 1999.

The Variance Decision includes emission limitations, compliance requirements, record keeping and reporting requirements specific to this boiler. These requirements are carried over in this permitting exercise.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{0}F)
TBBH-6	Turboblower Boiler House boiler no. 6	150	10.0	393,000	325

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Information, unless otherwise stated, used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on September 18, 1998 with additional information submitted on February 9, 1999, June 18, 1999, August 23, 1999, September 28, 1999 and December 22, 1999.

The terms and conditions of the proposed permit incorporate all the current applicable requirements for TBBH boiler no. 6, and supersede all terms and conditions of the prior operation permits that have been issued for this facility.

Emissions Calculations

See Appendix A (Emissions Calculation Spreadsheets) for detailed calculations.

Potential to Emit

Indiana Permitting Applicability Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Potential to Emit (tons/year)
Particulate Matter (PM)	1.2
Particulate Matter (PM-10)	1.2
Sulfur Dioxide (SO_2)	0.1
Volatile Organic Compounds (VOC)	0.9
Carbon Monoxide (CO)	13.4
Nitrogen Oxides (NO_x)	0.0
Lead (Pb)	0.0

(a) The permitting determinations pursuant to 326 IAC 2-7-10.5 are based on the potential to emit from the modification. For an existing emissions unit, this value represents the increase due to the modification (i.e. the difference between past actual and future potential emissions at boiler no. 6). The potential to emit at boiler no. 6 will be limited by a natural gas fuel usage restriction which is equal to the boiler's past actual usage.

(b) The potential to emit of CO due to the modification is less than 25 tons per year, but greater than 5 tons per year. Therefore, the modification shall be permitted pursuant to the provisions of minor source modifications under 326 IAC 2-7-10.5(d)(5) (Part 70 Permits; Source Modifications) for sources which limit individual fuel usage and fuel type for a combustion source.

County Attainment Status

The source is located in Lake County.

Pollutant	Status
PM-10	Moderate Nonattainment
SO_2	Primary Nonattainment
NO_2	Attainment or Unclassifiable
Ozone	Severe Nonattainment
CO	Attainment or Unclassifiable
Lead	Attainment or Unclassifiable

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Lake County has been designated as severe nonattainment for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

(b) The portion of Lake County in which the source is located has also been classified as nonattainment for sulfur dioxide (SO_2) and particulate matter with aerodynamic diameter less than 10 microns (PM-10). Therefore, these emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

Source Status

Existing Source Emission Offset and Part 70 Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	238
PM10	1683
SO_2	6147
VOC	4618
CO	1023
NO_x	4334

(a) This existing source is a major stationary source because it is in one of the 28 listed source categories and at least one regulated pollutant is emitted at a rate of 100 tons per year or more.

(b) These emissions were based on construction permit CP-089-9568-00121, which was issued on September 21, 1998.

Net Emissions Increase from Proposed Modification Project

The modification to boiler no. 6 does not fit the description of “like-kind” replacement and must be reviewed to determine the net emissions increase. The net emissions increase is determined by calculating the difference between past actual and future potential emissions. Although after the modification the boiler will have the capability to burn natural gas and BFG, the difference in actual emissions will be calculated based on the natural gas usage only. This is because the redistribution of BFG from the flares will offset any increases at the boiler.

As part of the source’s continuing effort to utilize more BFG (which would otherwise be flared) within the source for energy generation, the source intends to increase the combustion of BFG in boiler no. 6. Since the increase in potential emissions from combusting BFG in boiler no. 6 is offset by the decrease in emissions from flaring BFG, there is no net increase or decrease in emissions from this undertaking. This analysis leaves only the combustion of natural gas to determine the applicability of PSD and emission offset regulations.

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity using only natural gas, including enforceable emission control and production limit, where applicable):

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO_2 (ton/yr)	CO (ton/yr)	VOC (lbs/day)	NO_x (lbs/day)
Future Potential to Emit from TBBH boiler no. 6*	4.0	4.0	0.3	44.5	15.9	417
Past Actual Emissions from TBBH boiler no. 6	2.8	2.8	0.2	31.2	10.9	417
Net Emissions Increase from Project	1.2	1.2	0.1	13.3	5	0.0
PSD or Offset Significant Level De Minimis Rule Applicability Level (NOx and VOC only)	25 --	15 --	40 --	100 --	15 lbs/day	25 lbs/day

* Future potential to emit from boiler no. 6 is limited by natural gas usage limit of 1060 MMCF per year.

(a) Since VOC and NOx emissions from the project are less than 15 lbs/day and 25 lbs/day, respectively, the emission offset rules (326 IAC 2-3) do not apply for these pollutants.

(b) This modification to an existing major stationary source is not major because the net emissions increase of PM-10 and SO_2 are less than the Emission Offset significant levels and the net emissions increase of PM and CO are less than the Prevention of Significant Deterioration (PSD) significant levels. Therefore, pursuant to 326 IAC 2-3 and 326 IAC 2-2, the Emission Offset and PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)
This existing source has submitted its Part 70 (T-089-7663-00175) application on December 13, 1996. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

Federal Rule Applicability

(a) 40 CFR Part 60, Subpart D
TBBH boiler no. 6 is subject to 326 IAC 12 and 40 CFR 60.40, Subpart D (Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971), since it was constructed after August 17, 1971 and before June 19, 1984, and has a maximum heat input capacity greater than 250 million British Thermal units per hour. This rule requires the owner/operator to not discharge into the atmosphere gases from this boiler which:

(1) Contain PM emissions in excess of 0.10 lb/MMBtu;

(2) Exhibit greater than 20 percent opacity except for one six-minute period per hour of not more than 27 percent opacity; and

(3) Contain NO_x emissions in excess of 0.20 lb/MMBtu.

The above limits shall only apply when this boiler is burning natural gas by itself. Based on emission calculations, TBBH boiler no. 6 will comply with this rule. (Enclosed is a copy of this federal rule)

(b) 40 CFR Part 60, Subpart Db
TBBH boiler no. 6 is not subject to 326 IAC 12 and 40 CFR 60.40, Subpart Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units) for two reasons. First, the fixed capital cost of the proposed physical changes

does not exceed 50 percent of the fixed capital cost of a comparable new facility, and therefore the change does not meet the definition of "reconstruction", as defined under 40 CFR 60.2. Second, the proposed physical change will not result in increases in allowable emissions of the three pollutants to which the standard applies, and therefore, does not meet the definition of "modification" as defined under 40 CFR 60.2. The calculations in Appendix A demonstrate that emissions of regulated pollutants from boiler no. 6 decrease due to the modification.

State Rule Applicability

(a) 326 IAC 5-1 (Visible Emissions Limitations)
Pursuant to 326 IAC 5-1-2 (Visible Emissions Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Exemptions), visible emissions shall not exceed an average of twenty percent (20%) opacity in twenty-four (24) consecutive readings as determined by 326 IAC 5-1-4, unless otherwise stated in the permit.

(b) 326 IAC 2-2 (Prevention of Significant Deterioration); 326 IAC 2-3 (Emission Offset)
The NOx emissions rate from boiler no. 6 shall not exceed 0.14 pounds per million Btu (lbs/MMBtu) heat input when combusting natural gas. In addition, the total natural gas usage of TBBH boiler no. 6 shall not exceed 1059.7 million cubic feet (MMCF) per 12-consecutive month period rolled on a monthly basis. If a stack test demonstrates that the NOx emission rate is greater than 0.14 lbs/MMBtu, then the natural gas usage at boiler no. 6 shall not exceed 741.8 MMCF per 12-consecutive month period rolled on a monthly basis.

In addition, blast furnace gas and natural gas shall be the only fuels combusted in boiler no. 6. Therefore, the requirements of 326 IAC 2-2 and 326 IAC 2-3 do not apply.

(c) Variance Decision dated February 22, 1999

(1) Pursuant to the Variance Decision, PM-10 emissions from TBBH boiler nos. 1, 2, 3, and 5 shall not exceed a total of 0.037 lb/MMBtu and 61.0 pounds per hour.

(2) Pursuant to the Variance Decision, PM-10 emissions from TBBH boiler no. 6 shall not exceed 0.037 lb/MMBtu and 27.8 pounds per hour.

(3) Pursuant to the Variance Decision, SO_2 emission from TBBH boiler nos. 1, 2, 3, and 5 shall not exceed 0.182 lb/MMBtu and a total of 300.6 pounds per hour when the coke oven gas desulfurization facility is not operating.

(4) Pursuant to the Variance Decision, SO_2 emission from TBBH boiler nos. 1, 2, 3, and 5 shall not exceed 0.182 lb/MMBtu and a total of 300.6 pounds per hour when the coke oven gas desulfurization facility is operating.

(5) Pursuant to the Variance Decision, SO_2 emissions from TBBH boiler no. 6 shall not exceed 0.182 lb/MMBtu and 136.7 pounds per hour when the coke oven gas desulfurization facility is not operating.

(6) Pursuant to the Variance Decision, SO_2 emissions from TBBH boiler no. 6 shall not exceed 0.182 lb/MMBtu and 136.5 pounds per hour when the coke oven gas desulfurization facility is operating.

These limits are valid only until the Variance Decision expires on March 8, 2000. Unless the revisions to rules 326 IAC 6-1-10.1 (Lake County PM-10 Emission Requirements) and 326 IAC 7-4-1.1 (Lake County SO_2 Emission Limitations) have been approved, the effective date of the Variance Decision has been extended, or a new Variance Decision

has been issued by this date, TBBH boiler nos. 1, 2, 3, 5, and 6 shall be subject to the limitations under rules 326 IAC 6-1-10.1 (Lake County PM-10 Emission Requirements) and 326 IAC 7-4-1.1 (Lake County SO_2 Emission Limitations) as currently written. In such case, the Permittee shall apply for a permit modification thirty (30) days prior to March 8, 2000 to incorporate the appropriate limitations existing during that time.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 187 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

The proposed modification will emit levels of air toxics at negligible amounts and less than those which constitute a major source according to Section 112 of the 1990 Amendments to Clean Air Act.

Conclusion

The modification to TBBH boiler no. 6 will be subject to the conditions of the attached proposed **Minor Source Modification No. 089-10160, Plt ID 089-00121**.

Turboblower Boiler No. 6 Emissions from
Blast Frunace Gas, Coke Oven Gas, Natural Gas and No. 6 Fuel Oil Combustion

Company Name:	**U. S. Steel - Gary Works**
Address City IN Zip:	**One North Broadway, Gary, Indiana 46402-3199**
CP:	**089-10160**
Plt ID:	**089-00121**
Reviewer:	**Marco A. Salenda**
Date:	**October 26, 1998**

I. Past Actual Emissions for Boiler No. 6 (Average of 1997 and 1998 fuel consumption)

Total maximum heat input capacity (MMBtu/hr) = 670 (only 560 for BFG combustion)
Past actual throughput of BFG (MMcf/yr) = 28797
Past actual throughput of COG (MMcf/yr) = 0
Past actual throughput of natural gas (MMcf/yr) = 741.8
Past actual throughput of no. 6 fuel oil (kgal/yr) = 0

Pollutant	BFG			COG			Natural Gas			No. 6 Fuel Oil		
	Ef1	Past Actual Emissions		Ef2	Past Actual Emissions		Ef3	Past Actual Emissions		Ef4	Past Actual Emissions	
	(lb/MMcf)	(lbs/hr)	(tons/yr)	(lb/MMcf)	(lbs/hr)	(tons/yr)	(lb/MMcf)	(lbs/hr)	(tons/yr)	(lb/kgal)	(lbs/hr)	(tons/yr)
PM/PM-10	2.90	9.5	41.8	6.20	0.0	0.0	7.60	0.6	2.8	5.55	0.0	0.0
SO2	0.60	2.0	8.6	97.40	0.0	0.0	0.60	0.1	0.2	27.30	0.0	0.0
NOx	23.00	75.6	331.2	80.0	0.0	0.0	205.2	17.38	76.11	45	0.0	0.0
VOC	0.00	0.0	0.0	1.2	0.0	0.0	5.5	0.47	2.0	0.76	0.0	0.0
CO	13.70	45.0	197.3	18.4	0.0	0.0	84.0	7.1	31.2	5	0.0	0.0
Pb	8.86E-04	0.003	0.013	0.0	0.00	0.00	0.0005	0.000	0.000	0.00151	0.000	0.000

II. Future Potential to Emit of Boiler No. 6

Total maximum heat input capacity (MMBtu/hr) = 710 (only 670 for natural gas combustion)
Potential throughput of BFG (MMcf/yr) = 73172
Limited throughput of natural gas (MMcf/yr) = 1060

Pollutant	BFG			Natural Gas		
	Ef1	Potential Emissions		Ef2	Limited Emissions	
	(lb/MMcf)	(lbs/hr)	(tons/yr)	(lb/MMcf)	(lbs/hr)	(tons/yr)
PM/PM-10	2.90	24.2	106.1	7.60	0.9	4.0
SO2	0.60	5.0	22.0	0.60	0.1	0.3
NOx	23.00	192.1	841.5	143.6	17.38	76.11
VOC	0.00	0.0	0.0	5.5	0.67	2.9
CO	13.70	114.4	501.2	84.0	10.2	44.5
Pb	8.86E-04	0.007	0.032	0.0005	0.000	0.000

Methodology

MMBtu = 1,000,000 Btu; MMcf = 1,000,000 cubic feet of gaseous fuel; kgal = 1,000 gallons of liquid fuel
Heating value of blast furnace gas = 85 MMBtu/MMcf, coke oven gas = 535 MMBtu/MMcf, natural gas = 1,026 MMBtu/MMcf, no. 6 fuel oil = 150,000 Btu/gal
Emission factors for burning blast furnace gas are from FIRE 6.01 (5/98), SCC# 1-02-007-04.
Emission factors for burning coke oven gas gas are from FIRE 6.01 (5/98), SCC# 1-02-007-07.
Emission factors for burning natural gas are from AP 42, 5th Ed., Supplement D (3/98), Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC# 1-01-006-01, 1-01-0
except NOx which is a source accepted limitation equivalent to 0.14 lbs/MMBtu
Emission factors for burning no. 6 fuel oil are from AP 42, 5th Ed, Supplement B (10/96), Chapter 1.3, Tables 1.3-10, SCC# 1-01-004-01
Allowable PM/PM-10 (filterable only) and SO2 emission factors are based on USX's SIP submittal
Potential Throughput (MMcf/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x Heating Value (MMcf/MMBtu)
Future Potential to Emit (tons/yr) = Throughput (MMcf/yr) x Emission Factor (lb/MMcf)/2,000 lb/ton

Appendix A: Emission Calculations
Turboblower Boiler No. 6 Emissions from
Blast Frunace Gas, Coke Oven Gas, Natural Gas and No. 6 Fuel Oil Combustion

Company Name: U. S. Steel - Gary Works
Address City IN Zip: One North Broadway, Gary, Indiana 46402-3199
CP: 089-10160
Plt ID: 089-00121
Reviewer: Marco A. Salenda
Date: October 26, 1998

III. Net Emissions Increase

The following table shows the net emissions due to the increase in capacity of TBBH Boiler No. 6. Although after the modification, the boiler can use blast furnace gas and natural gas, the calculations for net emissions increase are based on natural gas and no. 6 fuel oil only because blast furnace gas that is not used in the boilers is flared. Therefore, combusting blast furnace gas in the boilers would be offset by a reduction in flaring and does not increase the potential to emit.

Pollutant	Net Emissions Increase		
	(lbs/hr)	(lbs/day)	(tons/yr)
PM/PM-10	0.3	6.6	**1.2**
SO2	0.0	0.5	**0.1**
NOx	-0.0	-0.0	**-0.0**
VOC	0.2	4.8	**0.9**
CO	3.0	73.2	**13.4**
Pb	0.0	0.000	**0.000**

IV. NSPS Applicability Determination

The definition of modification for NSPS applicability is any physical or operational change that increases the emission rate of any pollutant to which a standard applies. In the case of boiler no. 6, the pollutants to which standards apply are particulate matter, sulfur dioxide and oxides of nitrogen.

The boiler is being modified by replacing the burners for blast furnace gas with new larger burners and removing the coke oven gas and fuel oil burners. This results in the following emission rate changes:

Existing Fuel Oil Burner Capacity: 670 MMBtu/hr
Existing BFG Burner Capacity: 560 MMBtu/hr
Existing COG Burner Capacity: 560 MMBtu/hr
Existing Natural Gas Burner Capacity: 670 MMBtu/hr

New Natural Gas Burner Capacity: 670 MMBtu/hr
New BFG Burner Capacity: 710 MMBtu/hr

The worst case emission rate of the boiler on any fuel before and after the modification will be compared to determine if an increase in emission rates has occurred due to this modification.

BFG			Before	After
Pollutant	(lb/MMcf)	(lb/MMBtu)	(lb/hr)	(lb/hr)
PM/PM-10	2.90	0.03	19.11	24.22
SO2	0.60	0.01	3.95	5.01
NOx	23.00	0.27	151.53	192.12

COG			Before	After
Pollutant	(lb/MMcf)	(lb/MMBtu)	(lb/hr)	(lb/hr)
PM/PM-10	6.20	0.01	6.49	0.00
SO2	97.40	0.18	101.95	0.00
NOx	80.0	0.15	83.74	0.00

Natural Gas			Before	After
Pollutant	(lb/MMcf)	(lb/MMBtu)	(lb/hr)	(lb/hr)
PM/PM-10	7.60	0.01	9.52	9.52
SO2	0.60	0.00	0.75	0.75
NOx	205.2	0.38	256.98	256.98

Fuel Oil			Before	After
Pollutant	(lb/kgal)	(lb/MMBtu)	(lb/hr)	(lb/hr)
PM/PM-10	5.55	0.04	24.79	0.00
SO2	27.30	0.18	121.94	0.00
NOx	45	0.30	201.00	0.00

The emission rate is calculated by multiplying the emission by the appropriate heat input capacity.

As shown by the tables above, the worst case emission rate for each pollutant is lower or equal after the modification. Therefore, physical changes are not considered a modification pursuant to the NSPS regulations.